



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/820,665	03/30/2001	Jesse Zhuo	3626-0185P	4288
2292	7590	02/26/2004	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH			CHEN, TSE W	
PO BOX 747			ART UNIT	PAPER NUMBER
FALLS CHURCH, VA 22040-0747			2116	3

DATE MAILED: 02/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PRG

Office Action Summary	Application No.	Applicant(s)	
	09/820,665	ZHUO, JESSE	
	Examiner Tse Chen	Art Unit 2116	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 30 March 2001.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-17 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 30 March 2001 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____. | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Claim Objections

1. Claims 13 and 14 are objected to because of the following informalities: “*the main control computing device*” cited on lines 25 and 4 of pages 9 and 10, respectively, do not have an associated antecedent in claim 1 and thus, renders the device’s relation to the elements of claim 1 to be ambiguous. The Office will conduct the examination by taking the context of an uninterrupted power supply (UPS) environment as established in claim 1 into account and interpret “*the main control computing device*” to be one of the “*external apparatus*” such as a controller or computer that utilizes the UPS to prevent or mitigate effects of blackouts, brownouts, and other power supply anomalies, as it is well known to those in the art. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 7-8, 10, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bilir, U.S. Patent 5923099, in view of Lee et al., U.S. Patent 5815409, hereinafter referred to as Lee.

Art Unit: 2116

4. As per claim 1, Bilir taught a shutdown device¹ to be used with an UPS system [FIG. 1] comprising of:

- a counting module, which starts counting after receiving a shutdown signal² and outputs another shutdown signal to a shutdown module when a counting value coincides with a predetermined time value is generated [FIG. 1, item 55; FIG. 2, item 44; column 3, lines 24-34]; and
- a shutdown module, which receives the shutdown signal from the counting module and turns off the UPS in response to the shutdown signal [FIG. 1, item 50; FIG. 2, item 62; column 5, lines 29-32].

5. However, Bilir did not expressly disclose the handling of a switch off of the UPS, an event similar to an AC power supply loss as disclosed by Bilir.

6. Lee taught an AC-to-DC power supply system and a shutdown device comprising of a switch module to generate an OFF signal, a shutdown signal to external apparatuses, and another shutdown signal for the delay block that would ultimately shutdown the power supply module itself [FIG. 4, items SW311, D321, D312, and T313; column 5, line 43 to column 6, line 12].

7. An ordinary artisan at the same time the invention was made would have been motivated to look for a way to protect systems from being damaged when a power supply is accidentally switched off [see Lee: column 3, lines 11-18].

8. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Bilir and Lee to provide a shutdown device

¹ The device comprises of a CPU [FIG. 3, item 34] to process the various signals. The device can be implemented as a printed circuit board [column 3, lines 60-67] and installed within the UPS by an ordinary artisan skilled in the art.

within an UPS capable of safely shutting down external apparatuses before shutting itself down when an accidental switch off has occurred.

9. As per claim 2, Bilir taught the safe shutdown device to be installed in the UPS [column 3, lines 60-67].

10. As per claim 3, Bilir taught the safe shutdown device to be electrically connected to the UPS [FIG. 3, item 51].

11. As per claims 7-8, Lee taught the switch module to be an ON/OFF switch device [FIG. 4, item SW311].

12. As per claim 10, Bilir taught the predetermined time value to be preset in the counting module [column 3, lines 24-29].

13. As per claim 17, Bilir and Lee combined taught device. Therefore, Bilir and Lee combined taught method.

14. Claims 4-6 and 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bilir and Lee as applied to claims 1 and 2 above, and further in view of Spears et al, U.S. Patent 6304981, hereinafter referred to as Spears.

15. As per claims 4-6, Bilir and Lee taught a shutdown device for a UPS system operable to shutdown an external apparatus safely prior to shutting itself down in the event of a switch off. However, Bilir and Lee did not expressly disclose utilizing the system with multiple external computing devices.

² A disruption of the AC power results in the issuing of a power loss/OFF signal to the counting module in this particular reference. Additionally, the external apparatus is shut down first without user intervention [FIG. 1] before the UPS itself is shutdown.

16. Spears taught a shutdown system with time interval calculations to determine a safe delay for shutting down numerous servers and workstations.

17. As per claim 4, Spears taught external apparatuses comprising more than one computer [FIG. 4; column 4, lines 1-5].

18. As per claim 5, Spears taught external apparatuses comprising more than one main control computing device [FIG. 4].

19. As per claim 6, Spears taught external apparatuses comprising a main control computing device and more than one other external devices [FIG. 4; column 3, lines 10-11].

20. An ordinary artisan at the same time the invention was made would have been motivated to look for a way to extend the protection against power anomalies to multiple computing devices and maximize the battery resource of the UPS with better power down sequencing [see Spears: column 2, lines 1-10].

21. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Bilir, Lee, and Spears to provide a shutdown device for an UPS system capable of servicing multiple computing devices.

22. As per claims 11-12, Bilir and Lee taught a shutdown device on a printed circuit board configurable to be installed on any computing devices [see Bilir: column 3, lines 60-67]. The shutdown device comprises of a shutdown signal processing module to receive a shutdown signal and sending out a shutdown signal to other external apparatuses and a main control computing shutdown signal to the main control computing device to turn itself off [see rejection of claim 1 above]. However, Bilir and Lee did not expressly disclose an arrangement allowing multiple computing devices to shutdown in a hierarchical manner.

23. Spears taught a multiunit shutdown system comprising of an UPS connected to a server connected to other external apparatuses [FIG. 2], configurable for an efficient power down scheme.

24. An ordinary artisan at the same time the invention was made would have been motivated to look for a way to extend the protection against power anomalies to multiple computing devices in different hierarchies and maximize the battery resource of the UPS with better power down sequencing [see Spears: column 2, lines 1-10] by incorporating the shutdown device taught by Bilir and Lee as an additional board component to the server and other external apparatuses.

25. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Bilir, Lee, and Spears to provide a shutdown device for an UPS system capable of servicing computing devices in a multi-hierarchical system.

26. As per claims 13-16, Bilir and Lee taught using the predetermined time value to allow the main control computing device to safely shutdown by delaying the issuance of a shutdown signal to turn off the UPS. However, Bilir and Lee did not expressly disclose using a predetermined time value from the main control computing device.

27. As per claims 13 and 15, it is known to the art at the time of the invention to preset the predetermined time value in the main control computing device in a controlled shutdown environment [see Spears: column 1, lines 15-28; column 2, lines 1-5].

28. As per claims 14 and 16, Spears taught the predetermined time value to be computed by the main control computing device according to the shutdown times returned from other external apparatuses after the main control computing device receives a shutdown signal [column 7, line 39 to column 8, line 65].

Art Unit: 2116

29. An ordinary artisan at the same time the invention was made would have been motivated to look for a way to incorporate a more accurate predetermined time value from the main control computing device itself to maximize the battery resource of the UPS with better power down sequencing [see Spears: column 2, lines 1-10].

30. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Bilir, Lee, and Spears to provide a shutdown device incorporating the predetermined time value from the main control computing device.

31. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bilir and Lee as applied to claim 1 above, and further in view of Arakawa et al., U.S. Patent 6105138, hereinafter referred to as Arakawa.

32. Bilir and Lee taught a shutdown device for a UPS system operable to shutdown an external apparatus safely prior to shutting the UPS down in the event of a switch off on the UPS console. However, Bilir and Lee did not expressly disclose shutting down the UPS system from a remote location.

33. Arakawa taught a power supply control system comprising of a terminal device located in a remote location. The terminal device is operable to send a signal received by the main control computing device to shut down applications and disconnect from the power source or vice versa [FIG.1; FIG. 2; FIG. 3].

34. An ordinary artisan at the same time the invention was made would have been motivated to look for a way to remotely control UPS systems that may be located in cluttered or difficult-to-service areas. A remote control setup would also enable a more efficient power shutdown

scheme of multiple UPS systems by a common remote signal and negating the need to manually shutdown each UPS system.

35. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Bilir, Lee, and Arakawa to provide a shutdown device incorporating a remote controlled receiver as the switch module.

Conclusion

36. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Hayashi et al., U.S. Patent 6178515, disclosed a shutdown device capable of safely shutting down various operations when power supply is disrupted.
- b. Pequet et al., U.S. Patent 4769555, disclosed a power control device employing delays to shutdown various external apparatuses.
- c. Barlow et al., U.S. Patent 5367697, disclosed a safe shutdown means for a multiprocessor system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tse Chen whose telephone number is (703) 305-8580. The examiner can normally be reached on Monday - Friday 9AM - 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Lee can be reached on (703) 305-9717. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2116

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tse Chen
February 22, 2004



THOMAS LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100